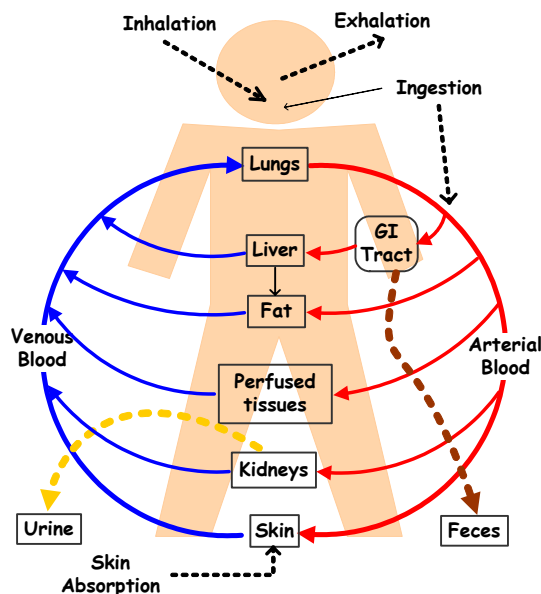


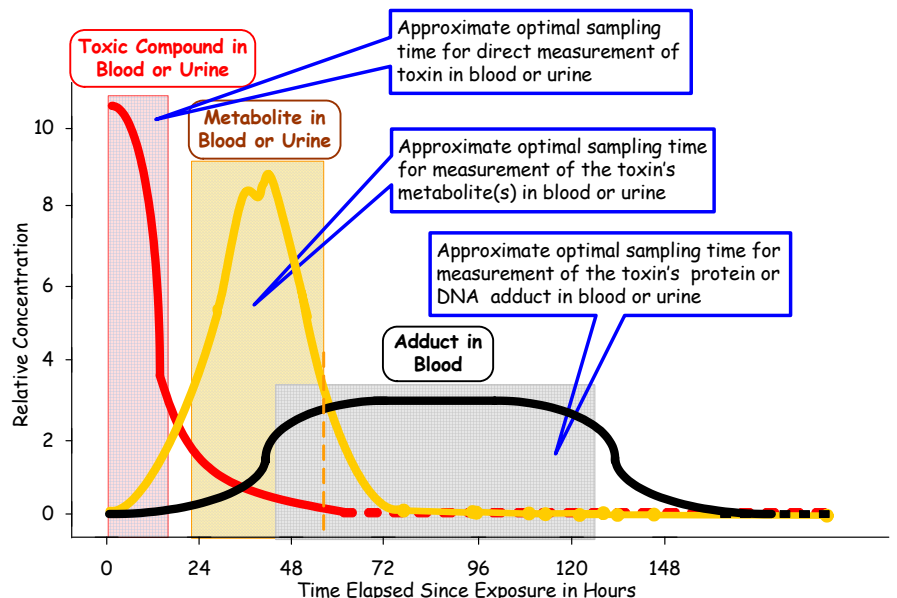
## Chemical Agent Exposure Signs and Acute Symptoms

This chart is a brief list of acute targets and major exposure indicators. It is not intended to be all-inclusive and is not intended for diagnostic purposes.

	Blood Agents	Heavy Metals	Pulmonary Agents	Nerve Agents	Ricin	Vesicants (Blister Agents)	
Example	Cyanide	Mercury, Thallium	Chlorine, phosgene	Sarin, VX		Sulfur mustard	Lewisite (arsenical)
Acute target	Blood forming mechanism	Kidney and nervous systems	Pulmonary system	Central & peripheral nervous systems	Multi-organ failure	Skin & mucosal membranes	Skin & mucosal membranes
Signs & symptoms	Convulsions	Diarrhea	Chest tightness	Chest tightness	Cough	Blisters	Hacking cough
	Dizziness	GI bleeding	Coughing	Convulsions	Delayed pulmonary edema	Delayed pain	Hoarseness
	Giddiness	Hypovolemic shock	Delayed pulmonary edema	Drooling & runny nose	Diarrhea	Hacking cough, hoarseness	Hypotension
	Headache	Nausea, vomiting	Eye, nose & throat irritation	Incontinence	Fever	Itching	Immediate pain
	Hyperventilation	Neurologic dysfunction	Frothy salivation	Muscle tremors	GI bleeding	Nausea, vomiting	Skin irritation
	Loss of consciousness	Renal failure	Shortness of breath	Nausea, vomiting	Nausea, vomiting	Runny nose	Tearing
	Nausea, vomiting		Wheezing	Pinpoint pupils	Respiratory distress	Skin irritation	
	Palpitations			Profuse sweating		Tearing	
Primary Clinical Matrix	Blood	Blood & Urine	Blood	Blood & Urine	Urine	Urine	Urine



Physiologically Based Pharmacokinetic Model for a Hypothetical Chemical Substance



Source: Adapted from LRN Level 1 Laboratory Chemical Terrorism Preparedness Training Binder

Approximate Sampling Time Frames Following Exposure to a Toxic Compound